

CLAIMS

1. Pneumatic tyre (10; 30; 50; 60), comprising:
- 5 - a pair of axially spaced apart annular reinforcing elements (14; 33);
 - 10 - a carcass structure (11; 31) comprising at least one carcass ply (12, 13; 32; 51, 52) extending between said annular reinforcing elements (14; 33) and secured at axially opposite end portions (32a) to a respective one of said annular reinforcing elements (14; 33), each axial end portion (32a) being turned up around said annular reinforcing elements (14; 33);
 - 15 - a pair of bead fillers (16; 34), each of said bead fillers (16; 34) being located radially outward of the respective annular reinforcing element (14; 33);
 - 20 - at least one flipper (17; 40) at least partially enveloping the respective annular reinforcing element (14; 33) and bead filler (16; 34), said flipper (17; 40) comprising a plurality of mutually substantially parallel elongated reinforcing elements;
 - 25 - a tread band (18; 39) extending circumferentially around said carcass structure (11; 31);
 - a belt structure (20; 36) circumferentially located between said carcass structure (11; 31) and said tread band (18; 39); and
 - 30 - at least one pair of sidewalls (19; 38) applied to said carcass structure (11; 31) in axially opposite positions,
- characterized in that said elongated reinforcing

elements comprise at least one preformed threadlike metallic element (200) having a diameter in the range of from 0.05 mm to 0.25 mm.

- 5 2. Tyre (10; 30; 50; 60) according to Claim 1, in which the threadlike elements (200) of said elongated reinforcing elements are all preformed.
- 10 3. Tyre (10; 30; 50; 60) according to Claim 1, in which said at least one threadlike element (200) is preformed with a deformation of the coplanar type.
- 15 4. Tyre (10; 30; 50; 60) according to Claim 3, in which said at least one threadlike element (200) is preformed so as to have a form of the undulating type.
- 20 5. Tyre (10; 30; 50; 60) according to Claim 4, in which said undulating form is of a substantially sinusoidal type.
- 25 6. Tyre (10; 30; 50; 60) according to Claim 5, in which said substantially sinusoidal form has a wavelength (P) of between 2.5 mm and 30 mm.
- 30 7. Tyre (10; 30; 50; 60) according to Claim 5, in which said substantially sinusoidal form has a wave amplitude (H) of between 0.12 mm and 1 mm.
8. Tyre (10; 30; 50; 60) according to Claim 4, in which said undulating form is of the helical type.
9. Tyre (10; 30; 50; 60) according to Claim 1, in which

- 5 said flipper (17; 40) comprises a central portion (171), contacting the respective annular reinforcing element (14; 33), and two leg portions (172, 173), extending from the respective ends of the central portion (171) and engaging the bead filler (16; 34).
- 10 10. Tyre (10; 30; 50; 60) according to Claim 1, in which the flipper ends (174, 175) are offset from each other.
- 15 11. Tyre (50; 60) according to Claim 1, further comprising a chafer (53) which comprises a plurality of substantially parallel metallic elongated reinforcing elements.
- 20 12. Tyre (50; 60) according to Claim 11, in which said elongated reinforcing elements comprise at least one preformed threadlike element (200) having a diameter in the range from 0.05 mm to 0.25 mm.
- 25 13. Tyre (50; 60) according to Claim 11, in which said at least one threadlike element (200) of said elongated reinforcing elements are all preformed.
- 30 14. Tyre (50; 60) according to Claim 12, in which said at least one threadlike element (200) is preformed with a deformation of the coplanar type.
15. Tyre (50; 60) according to Claim 12, in which said at least one threadlike element (200) is preformed so as to have a form of the undulating type.
16. Tyre (50; 60) according to Claim 15, in which said

undulating form is of a substantially sinusoidal type.

- 5 17. Tyre (50; 60) according to Claim 16, in which said substantially sinusoidal form has a wavelength (P) of between 2.5 mm and 30 mm.
- 10 18. Tyre (50; 60) according to Claim 16, in which said substantially sinusoidal form has a wave amplitude (H) of between 0.12 mm and 1 mm.
19. Tyre (50; 60) according to Claim 15, in which said undulating form is of the helical type.
- 15 20. Tyre (50; 60) according to Claim 11, in which the chafer (53) is located between the flipper (17; 40) and the at least one carcass ply (51, 52).
- 20 21. Tyre (50; 60) according to Claim 11, in which the chafer (53) is located axially external with respect to the at least one carcass ply (51, 52).
- 25 22. Tyre (50; 60) according to Claim 11, in which the chafer (53) is located axially internal with respect to the at least one carcass ply (51, 52).
- 30 23. Tyre (50; 60) according to Claim 11, in which the chafer (53) is located between two carcass plies (51, 52).
24. Tyre (10; 30; 50; 60) according to Claim 1 or 11, in which said at least one metallic threadlike element (200) consists of a metal comprising: steel,

aluminium or an aluminium alloy.

25. Tyre (10; 30; 50; 60) according to Claim 1 or 11, in which said at least one metallic threadlike element (200) has a coating chosen from the group comprising: brass, zinc, zinc/manganese alloys, zinc/cobalt alloys, zinc/cobalt/manganese alloys.
26. Tyre (10; 30; 50; 60) according to Claim 1 or 11, in which the number of the metallic threadlike elements (200) is between 2 and 5.
27. Tyre (10; 30; 50; 60) according to Claim 1 or 11, in which the stranding pitch of the metallic threadlike elements (200) is between 2.5 mm and 25 mm.
28. Tyre (10; 30; 50; 60) according to Claim 1 or 11, in which the density of the elongated reinforcing elements is comprised between 40 cords/dm and 160 cords/dm.
29. Tyre (10; 30; 50; 60) according to Claim 1, in which the elongated reinforcing elements are disposed at an angle relative to a radial plane of the tyre in the range of 15° to 60°.
30. Tyre (10; 30; 50; 60) according to Claim 11, in which the elongated reinforcing elements are disposed at an angle relative to a radial plane of the tyre in the range of 15° to 70°.